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Interaction of Agricultural Research Service With Action Agencies of the Department of Agriculture

An Assessment

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Interaction of Agricultural Research Service With Action Agencies of the Department of Agriculture

An Assessment

By

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**Forage and Range
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United States Department of Agriculture**

July 20, 1981

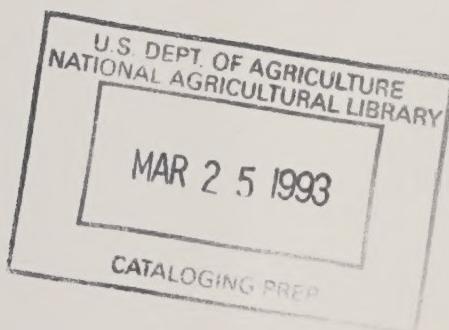


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Preface

This study of the interaction between the Agricultural Research Service (ARS) and Action Agencies (AA's) of the U.S. Department of Agriculture (USDA) was conducted in partial fulfillment of the requirements of the Senior Executive Service Candidate Development Program. The findings, however, are of vital importance to ARS and AA's. Thus, I tried to be objective and thorough. To maintain objectivity, I have attempted to report the thoughts of each of the interviewees and have relied heavily on their perceptions to convey the substance of the report.

Exhaustive investigation of the relationship of ARS with AA's was beyond the scope of my study. I think, however, that the generalizations derived from specific perceptions of ARS/AA relationships represent fundamental issues. I also think that in the respective agencies, management might well consider the old saw: "If it isn't broke, don't fix it." However, I would add, if it is out of alignment, adjust it. A number of adjustments have been made in the past few years, in the relationship of ARS and AA's. Adjustments should continue, and in a manner that recognizes the individuality of each agency while enhancing the strength of actions that are derived from synergistic cooperation on mutual goals.

Executive Summary

The Agricultural Research Service, as part of its mission, is mandated by law to develop new knowledge and technology; Action Agencies, and others, are developers and users. Thus ARS and AA's have numerous opportunities to interact. How effective is this interaction? That is the basic question that is addressed in this study.

To assess the effectiveness of the interaction of ARS with AA, I interviewed 57 specialists with widely ranging responsibilities in four selected AA's; namely, Animal Plant Health Inspection Service (APHIS), Farmers Home Administration (FmHA), Food Safety and Quality Service (FSQS), and Soil Conservation Service (SCS). I also interviewed employees in the Science and Education Administration (SEA) and Agricultural Research (SEA-AR). During the course of this study, SEA became Science and Education (S&E), SEA-AR became Agricultural Research Service (ARS), and FSQS became Food Safety Inspection Service (FSIS).

The interviewees' perceptions were analyzed and classified into five issues of concern and recommendations within each issue. Because of the scope of the study and time available, the recommendations are statements of what needs to be done rather than how to do it.

The issues and recommendations are:

Issue 1. Promote understanding of missions, goals, and roles within and among agencies.

- Recommendation a. Develop specific programs to assist employees in knowing their positions, their responsibilities, and their relationships to the goals of the unit and agency.
- b. Each agency should make (and state) a specific commitment to fulfill its mandated obligation to other agencies.
- c. ARS needs a national research strategy consistent with present and future roles.
- d. ARS needs a long-range staffing strategy consistent with its present and future roles.

Issue 2. Promote effective and efficient inter- and intra-agency communications.

- Recommendation a. Establish responsibility for translating technical information into application statements.
- b. Facilitate person-to-person contact at the operation and program level.
- c. Develop more effective methods for two-way communications and followup within and between agencies.

- d. Communicate not only research needs and research solutions, but also agency policy, roles, and attitudes.

Issue 3. Promote the use of appropriate mechanisms or structures for effective interactions.

- Recommendation
- a. Provide for a framework for interaction.
 - b. Provide for continuity of activities.
 - c. Provide for flexibility of actions.
 - d. Provide for accountability of obligations.
 - e. Provide for coordination of efforts.

Issue 4. Promote activities that enhance responsiveness.

- Recommendation
- a. ARS should maintain a contingency fund and find other means to meet emergencies of AA's and to reduce the time from problem to solution.
 - b. ARS and AA conduct special joint technology assessment sessions to identify the most probable future problem areas.

Issue 5. Promote the individuality of each agency.

- Recommendation
- a. ARS must maintain scientific excellence, a balance of basic and applied research, and a sensitivity to the needs of AA's.
 - b. AA's should continue to develop and apply appropriate technology to consumer problems and to be aware of the impact of their requests on scientists.

The relationship of ARS to AA has been changing in the past few years, apparently for the better. This improvement reflects the positive attitudes of the current administrators. Further improvement, however, would be desirable.

The interaction of ARS with AA's and with the public is a very complex system, and a lot of nuts and bolts can work loose or get lost. The details can sometimes overwhelm the system and hence the need for a holistic approach. Attitudes, roles, mechanisms, communication, and people are key components of the system. Future successes will depend upon how each agency views those components in relation to its mission and the specific actions that are taken. I think there is reason to be optimistic.

Introduction

Research applied is effective research. Application of all research is, however, not always effective, nor efficient.

In science, as in all life, specialization is the name for separate components and processes; integration of these components and processes is necessary for proper functioning of the whole. Within the Department of Agriculture, specialized agencies are separately responsible for research and its transfer. ARS develops new knowledge and technologies; AA's adapt this knowledge and technology to the consumer--the public needs. Thus, ARS and AA's are dependent upon each other for successful fulfillment of their separate and distinct roles. For the purpose of this report, regulatory functions are synonymous with action functions..

How effectively is each agency fulfilling its mission? How do the agencies interact to affect the fulfillment of the mission? Are the roles of each agency understood within that agency and among others agencies? How do demands of an agency to fulfill its role affect the employees within that agency and within other agencies? These are a few of the questions that focus this study on identification of factors that bear upon the effectiveness of ARS/AA interactions. The goal was to identify issues derived from ARS and AA employees' perception and to develop strategies that will enhance the ability of each agency to determine areas of mutual support in fulfilling their respective roles.

The specifics of coordinating ARS/AA interactions were not studied.¹ Procedures have been developed and set forth in the document developed by SEA-JPE.

¹Anonymous. 1980. A plan for coordination with Action/Regulatory and Science/Education Agencies. Prepared by PHT, Food and Nutrition Group, PPS, JPE, SEA. Dec. 9, 1980.

Procedures

ARS interacts with several AA's within the Department; namely, Soil Conservation Service (SCS), Food Safety and Inspection Service (FSIS), Animal Plant Health Inspection Service (APHIS), Farmers Home Administration (FmHA), Agricultural Marketing Service (AMS), Federal Grain Inspection Service (FGIS), and Agricultural Stabilization Commodity Service (ASCS). ARS also interacts with AA's in other Departments. Because of time constraints, it was deemed necessary to assess the interaction of ARS with only four selected agencies; namely, SCS, FSIS, APHIS, and FmHA. These four AA's have differing missions and thus require involvement of a wide range of research technologies from ARS. No attempt was made to identify what was specifically "right" or "wrong" about any of the interactions, but rather to identify fundamental factors that emerge from patterns of items and events. Thus, applicability of any of the issues and recommendations for any agency other than the ones studied must be considered with that note of caution. I should also point out that agencies did not receive equal attention. I took advantage of opportunities and collected data while traveling as a part of my regular assignment, and time did not permit me to go as far as I desired, or probably as far as was necessary.

Basic data were collected in 57 interviews. This technique was selected as being most appropriate, and the book "Elite and Specialized Interviewing" was used as a reference.² Interviews were conducted at three levels within each agency; that is, policy (PO), programing (PRO), and operations (OP). For the purpose of this study, I have considered that agency Administrators set policy; programing level included Program Staff and Regional Administrators; and the operational level included Area Administrators, Research Leaders, Scientists, Program Leaders, and Technical Specialists. Many individuals operated at or had knowledge of more than one level.

Only individuals who had knowledge of ARS/AA interactions were interviewed. Each interviewee suggested names of other potential interviewees, of whom I contacted only about one-third. Selection was made to give representation of the agencies and level of responsibility within each agency. As stated above, some interviews developed from unplanned opportunities and thus introduced an element of randomness.

Although a list of basic interview questions was initially developed, each interview was permitted to take its own course. The basic questions were "What has been the nature of your interaction with ARS or an AA?" "What have been the successes?" "What needs to be improved?" and "With whom have you worked?" Specific perceptions were pursued to enhance understanding and thoroughness. No interview continued beyond 1 hour. All interviewees were cooperative, well informed, and willing to offer their perception of ARS/AA interactions.

²Dexter, L. A. 1970. Elite and specialized interviewing. Northwestern University Press. Evanston, IL.

Issues and Recommendations

The following issues and recommendations were developed from the perceptions of the interviewees and some of the resource material. Perceptions, sometimes direct quotes, but most times paraphrases, are reported only if they appeared more than once and from different sources. Thus, these issues and recommendations suggest new courses of action and add support to those in progress. Not all comments are reported. A perception was reported if the idea supported a specific issue or recommendation and was representative of several similar perceptions. Neither interviewee names nor their agencies are shown, and for a purpose: first, to protect the anonymity of the interviewee and to promote openness, and second, to prompt each "agency" to ask, "Does that apply to us?" I have tried to report the perception and the intent of the interviewee accurately.

Some comments may reflect a perception that does not match reality; however, the perception is real and thus it makes a valid statement.

Some of the issues and recommendations suggest new activities, and some suggest activities that are already in place. I have not identified which is which.

Issue 1: Promote understanding of missions, goals, and roles within and among agencies.

- You are an agency; we are an agency. You have problems; we have problems. And if we have time left, we will work together. (AA, OP)³
- We get together with ARS to identify needs. We are so closely allied that our needs are mutual. (AA, OP)
- The question is not whether research needs to be done, but by whom? and how? (ARS, PRO)
- ARS should not claim their research meets our needs. On the surface, it sounds as if it meets our needs. ARS researchers generate projects that interest them. (AA, PO)
- AA's are consumers of science and technology. We have the same philosophy towards them as we have towards Extension. (S&E, PO)
- The science of ARS should be second to none, and ARS must accept its relation to AA's. ARS has the responsibility for serving the research needs of AA's. ARS has the obligation to be responsive. (S&E, PO)

³Identifiers in parentheses refer to the agency of the commentator, S&E, ARS, and AA's; and OP, PO, and PRO refer to the level of the commentator within the agency.

Recommendation a. Develop specific programs to assist employees in knowing their positions, their responsibilities, and their relationships to the unit and agency goals.

- We had good relationships with one of the AA's, largely because of personnel, and we were doing a good job for them, but we were doing a poor job for some of the other agencies. (S&E, PO)
- Some members of the National Program Staff of ARS in the past had the philosophy that ARS should do the research and that AA's should see that it was applied. In other words, just turn the data over to AA's. Also, ARS shouldn't go to AA's for research needs, but they should come to ARS. (ARS, OP)
- We all need to improve our awareness of constraints on participation. ARS doesn't know of the impact of regulations or pressures on AA's, and AA's don't know the effect of reductions on ARS scientists. (S&E, PRO)
- We are not staffed to do research, but to review it. (AA, PRO)

Comment: It was apparent, even in this rather biased sample (all persons contacted had reason to be aware of their relationship to other agencies), that employees' perception of their jobs varied considerably. This undoubtedly reflects personal wishes, but it can also reflect a lack of understanding of their positions as parts of the whole. We identify most readily with those things with which we have immediate contact; the further from immediate contact, the greater the abstraction. The Department of Agriculture, however, deals with real world problems, not abstractions. Thus a conscious effort to place the Department's program and the employees' part of it in the real world must be a continuing effort.

Recommendation b. Each agency should make (and state) a specific commitment to fulfill its mandated obligation to other agencies.

- ARS is an entity and will do what it wants to do. Each agency has a mission and a role. Sensitive issues and political pressures get attention. ARS must make a commitment to AA's. (AA, PO)
- Historically, our agency sent out research needs, but nothing happened. No research plan, no report. ARS had a comfortable research philosophy, "being free to do research." (AA, PRO)
- I don't know ARS's policy within the State. My perception is that ARS is slow to adjust. (AA, OP)
- ARS research should be coordinated to meet the needs of AA's, but coordination must be ongoing--it cannot be just for the budgeting process (S&E, PRO)

- There is a high, positive correlation between the extent to which the agencies cooperate and the communication between the administrators. (ARS, PO)
- As administrators, we can give thrust to a program by saying we need to work on a problem; we need to say more than that we should get together. (ARS, PO)

Comment: Recommendation 1.a. dealt with the role and commitment of the individual; recommendation 1.b. deals with the collection of individuals, the agency. The personification of the agency, to a great extent, resides in the agency head; thus the Administrator's commitment impacts significantly the will and direction of the agency.

Recommendation c. ARS needs a national research strategy consistent with present and future roles.

- We need to solve real problems. Research needs to be problem oriented. We need a plan, not constantly changing problems. We don't understand what we are doing. Technology is advancing faster than our ability to interpret it. Just because we can measure something doesn't mean that it is bad. (ARS, OP)
- Our scientists like having well-defined goals (ones that we have set according to program needs), but they don't like being told how to do research. Setting broad goals does not infringe on scientific freedom. (ARS, OP)
- Our needs are changing because our clients are changing. It isn't only farmers any more; this will affect the kinds of research needs. (AA, OP)
- Industry groups sometime impact ARS/AA relationships. They are a part of the Congressional power cluster; thus they affect the budgeting process and our future actions. (ARS, PO)
- ARS Regional Offices do not enter into the problem-identification process, thus they have weak links to our agency. For us, State and national considerations are important. (AA, PRO)
- We intercept tons of dangerous material at our ports of entry each year. We are pushing our sphere of influence outside of this country. This will help prevent their problems from becoming our problems. (AA, PO)
- To meet the needs of AA's, we are diverting existing resources--they are finite--we are getting away from our long-term mission. (ARS, OP)

Comment: ARS has recently published a mission and goals statement. Perceptions used to support this recommendation may reflect the recency of the statement rather than the immediacy of a problem. In the context of this recommendation, implementation of recommendation 1.a. takes on additional importance. If there is ambiguity about ARS's role within the Department, ARS's effectiveness with other agencies will be diminished. Similarly, there should be no doubt about the mission and goals of each AA.

Recommendation d. ARS needs a long-range staffing strategy consistent with its present and future roles.

- We need to have an ongoing process. Research people begin to get tunnel vision--they don't see the parameters that affect their decisions. (AA, PRO)
- ARS needs to organize within the agency; it needs some firefighters and some ivory tower types. We can't increase overnight an area of research by 50 percent and tell scientists to do it; we need to be sensitive to what scientists want to do. (S&E, PRO)
- We have to be highly selective in choosing scientists to be involved with AA's; some may be productive as scientists, but they may not be the ones we want. (ARS, PO)
- ARS has to serve the clientele of the scientific community, the production community, and the regulatory community. This impacts on the types of scientists needed and also on their evaluation. (ARS, PRO)
- Our agency and ARS were together once; thus, we had a close relationship among the players. Time has brought new players and the tendency to drift apart. This must not happen. (AA, PO)
- The first few years after reorganization, there was good interaction because of the knowledge of each other. In time, this association was replaced as new scientists joined both ARS and our agency. Thus, it was recognized that there was a need for continuing liaison between our two agencies. (AA, PRO)
- We need to address, as agencies, working together, the best ways to deal with tight budgets, personnel freezes, and travel reductions--the impact of these is felt for years. (AA, PO)

Comment: These perceptions emphasize the importance of effective research as a fundamental component of service to the needs of the agricultural community. Because needs are constantly changing, and because science and technology are dynamic and evolving, policies and management strategies must be frequently reassessed for appropriateness to the time and situation. Each Research Leader should be aware of the Unit's role in ARS and the staffing strategy for the Unit. Mismatch of a scientist's talents and interests with a Unit's goals is a waste.

Issue 2: Promote effective and efficient inter- and intra-agency communications.

- We need better communications with ARS before we identify problems. ARS must learn to listen. Our agency doesn't need its own research capability; we do need good information exchange among people who are not tradition bound. ARS scientists have to get out of their ivory towers; they need to be motivated by the knowledge of problems they are solving for real people. (AA, PRO)
- We look at development of new research needs and also at ways of getting the results. ARS is not responsive, but this may be a lack of communication. Both parties are at fault. We need to know which projects get funded and those which don't. (AA, PRO)
- Documentation of research needs that floats up and down the line within an agency isn't worth the paper it is written on. Such documentation is too general and isn't translated into researchable questions. (ARS, OP)
- ARS has several different types of interactions with AA's--work groups, task forces, committees, interdepartmental activities, etc. (AR, PRO)
- I have had no contact with ARS. I really don't know what ARS has to offer. (AA, OP)
- As a Field Agent, I didn't have much contact with ARS. I just used their data. (AA, OP)
- I am kind of isolated; I need somebody to talk to. I need to have a meeting with my peers occasionally to find out what they are doing. I would like to know what new technology is available. (AA, OP)

Comment: Lack of adequate communication within AA's was mentioned more frequently than anything else. I believe this reflects a sincere desire to be a part of the "team," and, to some extent, is an indictment of past and present operations, if not policies.

Recommendation a. Establish responsibility for translating technical information into application statements.

- We would like to get the data sooner than the scientists would like to give it. They would like to wait until it is published. We would also like to know which data can be used in a preliminary way, and which need to be tested. (AA, PRO)

- Sometimes ARS wants to get data out before they have really been tested. We have rigid standards; and if the public knows the data exist, they want to know why they can't have it. (AA, PRO)
- Scientific publications are not adequate for AA's. A specific type of publication is needed. If it is not a slick-back publication, this could penalize scientists. Work is being done for AA's that has an impact on them, but they don't know about it. (ARS, PRO)
- It is not clear who is responsible for application of data--AR or AA's--particularly for preliminary observations. (ARS, OP, and PRO)
- Our work contributes directly to publications used by the AA. In our case, they have the necessary technical expertise to put it into the proper framework. We have not had any trouble in publishing data in technical publications after they appear in an AA publication. (ARS, OP)
- One of the AA's has been critical of our ability to conduct research for them; also, they expect us to do all the literature review. They don't seem to be technically oriented. (ARS, OP)
- Our agency does not do a good enough job of researching the literature. Data are available that aren't getting applied. We need someone to compare research needs with the literature available. (AA, PRO)
- Our agency journal is so technical that we in the field can't understand it. You people are so concerned about getting torn apart by experts, your papers get too technical. We need to have someone translate them for us. I feel that the scientist thinks that once the publication is done, that's it. (AA, OP)
- ARS has been responsive to meeting our needs, but we did not know what research was done; for example, we did not know of your annual reports. (AA, PRO)
- Our agency needs to interact also with Extension. Maybe they should be responsible for transfer of technology from ARS to AA's. (AA, PRO)

Comment: It should not be surprising that feelings are rather strong and varied about publication; it is the medium of choice for documenting research. It is important that peer review panels of ARS recognize the importance of developmental and applied research. Intra-agency newsletters and other information-exchange documents seemed to be well received at the operational level. It would be well for ARS and AA's to consider additional ways of facilitating the first step from technical abstraction to technological reality; i.e., translation from scientific to layman's language.

Recommendation b. Facilitate person-to-person contact at the operation and program level.

- The more we can get dirty together, the less problem we have in communications. (ARS, OP)
- The ARS people at the field station are good to work with. The closer the station, the better the contact. (AA, OP)
- Working directly with ARS scientists is great. I am getting a better grasp of how ARS functions. I see that scientists within ARS are isolated from each other. I have made a contribution to ARS. I have been able to show the scientist the end result of their research. (AA, OP)
- We have had no problem in getting research data translated to applied form. We have worked with ARS from the very start of the project. They have altered their programs to meet our needs. (AA, OP)
- The biggest opportunity for interaction is at the local level. We need to interact with the scientists one-on-one. However, the level of the problem is important. Local needs don't get attention or high priority. You have to get rid of the alligators before you can drain the swamp. (AA, PRO)
- Colocation is good, but ARS can get dominated by AA needs, and scientists can suffer. AA views its needs differently from the way ARS does. (ARS, OP)
- ARS scientists are looking for an opportunity to see their research applied. This is a good relationship to foster. If AA and ARS scientists were not colocated, some more formal means of communication would need to be established. (AA, OP)
- Working with an AA was a good professional experience, but a financial disaster. I am not sure if I will get appropriate credit. (ARS, OP)

Comment: In love, it is said that "absence makes the heart grow fonder," but in science, it seems to be just the opposite. Shared offices result in shared goals, problems, and solutions; shared conflicts are also possible, but if they exist, they didn't surface. Recommendations 2.b. and 2.c. indicate that communications by the written word remain abstractions; whereas, the spoken words become reality. Obviously, it is not possible nor necessary to solve all problems by an ARS/AA team approach. However, opportunities for ARS and AA employees, at all levels, to interact should be encouraged; such things as joint symposia, field trips, seminars, and the like come to mind. However, today's economically restricted mobility could adversely affect temporary colocation.

Recommendation c. Develop effective methods for two-way communications and followup within and between agencies.

- Problems are identified and sent up the line, but results are never known. We don't have good communication within the agency, particularly from the top down. (AA, OP)
- Each year we send up a list of research needs, but we never get any feedback. Feedback would be helpful in planning. (AA, PRO)
- We send in research needs, but we don't see anything happen. We feel we get better response at the local level. (AA, OP)
- We send out annual reports, but get no feedback as to how useful they are. (ARS, PRO)
- I had a problem, but I didn't know to whom in ARS to go. I asked my chiefs, and they didn't suggest anyone. (AA, OP)

Comment: Possibly we take for granted things that we shouldn't.

Recommendation d. Communicate not only research needs and research solutions, but also agency policy, roles, and attitudes.

- The scientists and field men do not understand each other's problems. There is not a good understanding in our agency as to how long research takes. (AA, PRO)
- Our agency does not have enough contact with ARS at the program staff level in Washington. We are training our staff in problem analysis and also planning and evaluation. The National Program Staff of ARS does not have this expertise; the closest thing is in JP&E. Thus, people are talking past each other. (AA, PO)
- Lines of communication have been bad the past few years. There seems to be some suspicion on the part of the AA. Apparently there was some change in philosophy. Now I'm reluctant to get involved in a close relationship. (ARS, OP)
- AA's interact with the Extension Service (ES) and the Cooperative State Research Service (CSRS), as well as with ARS. ARS is best organized to respond. ARS must do some education with ES and CSRS to be sure we don't compete. (ARS, PRO)

Comment: Recommendation 2.d. relates to Issue 1.--mission and goals. An agency must have a position and state it. Equally important, the position must be accepted and "lived." It is not enough to communicate only "what"; the "why" and "how" make the message complete.

Issue 3: Promote the use of appropriate mechanisms or structures for effective interactions.

- A variety of memos and cooperative agreements exist. They are probably stored in a basement somewhere. (AA, PRO)
- We do not have a good vehicle for knowing what is available. Also, if we had a vehicle for getting research needs to ARS, it would help us. It's ignorance on our part--it has been my fault that I don't know more. (AA, PO)

Recommendation a.4 Provide a framework for interaction.

- A memorandum of understanding of an AA with ARS is a planning framework; it identifies things and times. ARS, however, fears that the AA will dictate to them, but that isn't so. ARS and AA's need to give and take. (S&E, PRO)
- AA's need information. Congress funds ARS to do research for AA's. AA's need the research, and they need to report results. Therefore, specific plans are a must. (AA, PRO)
- Research needs get aggregated several times as they go up the line; and at the end, they are hard to identify. AA's should use a process similar to that of ARS in setting up research projects. (AA, PRO)

Comment: I refer again to a plan for coordinating ARS/AA interactions.¹ Memoranda of understanding exist and are being reviewed and revised.

Recommendation b. Provide for continuity of activities.

- ARS and our agency need interactive followup processes throughout the year as problems and findings surface. Continuing processes, however, cannot be formalized. (AA, PO)
- The reorganization in '72 caused the additional need to work a little harder to identify what should be done. (AA, PO)

Recommendation c. Provide for flexibility of actions.

- We have formal and informal interactions. Hardly a day goes by that we don't have technical discussions, and they are encouraged

⁴These are not so much recommendations as they are desired results.

In planning our technology development program, ARS is the first group to be involved. They comment on the appropriateness of the use of existing technology. We have no formal memorandum of understanding for a specific structure, but we have a protocol for the process. We prefer to keep things informal; this is the key. (AA, PO)

- We need to find out how to get the data to the action people. We can't stick with one approach just because we have done it that way before; we need to try different things. (ARS, PO)
- At this level, I don't see a formal list of research needs developed by the AA. We bootleg research directly with the AA; some is by cooperative agreement on AA funds. (ARS, OP)
- We need a scheduled structure for information exchange at the operational level. Scientists need to know what is going on. However, a memorandum of understanding is no good if it is only a piece of paper. There ought to be an ARS/AA committee at the action level. (ARS, OP)

Recommendation d. Provide for accountability of obligations.

- The problem with the current memorandum of understanding is the frequency of reporting. Scientists spend time creating paper, not pursuing science, or solving problems. (ARS, PRO)
- A formal memorandum of understanding for structured contact may result in lost efficiency if the scientists have to sit around writing quarterly reports. (S&E, PO)
- Using CRIS to document needs of AA's will give hard evidence of involvement. There is still some uncertainty as to who is responsible for the coordination. We need to consider what lines of communications are necessary for accountability and those which are necessary for getting the job done. (ARS, PRO)

Recommendation e. Provide for coordination of efforts.

- There needs to be a program coordinator, not one who just schedules meetings but looks at all factors--science, problems, communications, attitudes and understanding--all of the needs of each agency. (ARS, PRO)
- ARS should have a coordinator of AA contacts. Our agency is frustrated as to whom to contact. (AA, PRO)

- To be responsive to needs, there must be a centrally controlled research organization (S&E, PO)

Comment: It is possible to go from point A to point B by dead reckoning; however, once the path has been broken, subsequent travelers are aided by posted instructions. However, deviations from the established route sometimes result in new and valuable experiences.

From all of the comments and recommendations related to this issue, I get the impression that some kind of formal approach or protocol is wanted by most. However, there is some question as to how rigid or detailed it should be. The specific structure should be appropriate to the specific relationship; ARS may need different agreements with FSIS than it does with APHIS⁵ or FmHA. In any case, the agreement ought to be a means to an end, and not the end.

⁵Ralph A. Bram. Aphis research requirements as they relate to ARS.
(Special Report) June 1977.

Issue 4: Promote activities that enhance responsiveness.

- The agricultural production system is a series of interacting parts; for example, production versus protection. We tend to disassociate these things, but we shouldn't. We need the holistic approach. We need synthesizers. We need "think jumpers," those who can look at the swamp and forget the alligators. ARS must serve science and the application of science. (AA, PRO)
- ARS has a number of constituents, and all their needs must be met. We all must set priorities consistent with our reason for being. We push ARS to come up with candidate problems. The more innovative and creative they are, the more likely they will address a future need. (AA, PRO)
- In the future, needs from our agency are to be structured along lines of national research programs and technological objectives. The intent is to be as specific as possible in both research and technology transfer. We need to look not only to immediate but also long-range needs. (AA, PRO)

Recommendation a. ARS should maintain a contingency fund and find other means to meet emergencies of AA's and to reduce the time from problem to solution.

- The lag between research needs and results is sometimes a problem. One approach is to focus on current-year budget and to look at what we had in the previous years. Next, we want to look at the budgets 2 or 3 years down the road. We do need forward thinking. We are now suggesting that ARS hold a contingency fund for emergencies and that this be a part of their planning. (AA, PO)
- Research and application have an intrinsic conflict. Research takes time. This is independent of agency roles or administrative responsibilities. (ARS, PRO)
- The urgency of the problem dictates the aggressiveness of the AA policy. (AR, PO)
- ARS scientists need to be familiar with AA programs; they could then see associations among our needs and their knowledge that would suggest solutions to problems without the long lag time or the need for new research. (AA, PRO)

Recommendation b. AA's and ARS should conduct special joint technology assessment sessions to identify the most probable future problem areas.

- We have not kept up with emerging technology, nor determined the best plan. (AA, PO)
- If we were more familiar with what ARS was doing, then we could see association among research findings and find solutions to problems before the problems find us. (AA, PRO)
- We need to give ARS an opportunity to be flexible in the budgeting process if we are to meet our needs. We are attempting to identify future needs, being proactive rather than reactive. We need a balance of short-term and long-term problems and solutions. (AA, PRO)
- Our agency will support basic research when it solves major problems. We need dreamers who can visualize, who will look at what we have and be dissatisfied. We need to look at the long-term problems, future needs. ARS is in the best position to do this, because they are uncluttered by details. We need to identify problems, not to get embroiled in details. (AA, PRO)
- Our agency doesn't do a good job of identifying needs. We need to be forward looking; we must be active rather than reactive. (AA-PRO)

Comment: It is possible for ARS to "respond" to a need and yet be perceived as non-responsive; responding is the action, and responsiveness is the result. The inherent inertia of research and processes of administration, temporally and spatially, separate problem and solution. Anticipation of need, reservoir of knowledge, and streamlining of administrative processes will contribute both to the perception, and the reality of responsiveness. Thus, ARS and AA's share the responsibility for solving problems in a timely manner.

Issue 5: Promote the individuality of each agency.

- "Almost all studies of scientists agree that the need for autonomy and for independence of action is something that seems to be particularly strong in this group."⁶
- Research and application have intrinsic conflicts. Research takes time, and this is independent of agency roles or administrative responsibilities. (ARS, PRO)
- Relationships in the past have not been too good. AA wanted applied work. The researchers' response was that applied work didn't lead to publication. However, this attitude is changing because of current personnel. (S&E, PRO)
- ARS has multiple pressures--it is responsible to producers, to regulators, and to science. Conflicts can sometime arise because science provides a basis for change, but regulatory agencies sometimes don't want to change. ARS must be controlled by research, not by politics. (ARS, PRO)
- In some ways, ARS's interaction with AA's and other agencies can cause problems, as employees of each have different ideas as to how to approach the same goal. (ARS, PRO)

Recommendation a. ARS must maintain scientific excellence, a balance of basic and applied research, and a sensitivity to the needs of AA's.

- ARS scientists cut their own throats; they don't get recognized for applied publications. It has not been determined whose responsibility it is to put technical data into applied form. (AA, PRO)
- ARS scientists are reluctant to take suggestions unless some money comes with them. "Keep a scientist hungry, and he can be bought." ARS doesn't like to do applied research, and considers it too pedestrian. The current system of evaluation of science puts emphasis on scientific contributions. (ARS, PRO)
- If scientists were never bothered by AA's, they would only get feedback from publications; but getting involved gives them a shot-in-the-arm; it motivates them; they see science applied to real problems. (ARS, PO)
- ARS scientists are affected by being assigned to AA problems. They work for a while on a project and then go back. They can lose continuity in their program. (ARS, PRO)

⁶Anne Rowe. In *Scientific creativity: Its recognition and development.* C. W. Taylor and F. Barrons (eds.). Wiley, NY. 1963. p. 135.

- The research people have to determine how best to do research. (AA, PO)
- We need to be sure that scientists do what they do best. (ARS, PO)

Comment: A reservoir of dollars, a contingency fund, as recommended in Issue 4, would help ARS respond to the immediate needs of AA. However, a reservoir of knowledge is essential to meeting long-range needs. Science and technology developed through continuing sound research programs, directed toward USDA missions and goals, will provide this necessary knowledge. In focusing on the problem, we must not lose sight of the problem solver--the scientist.

Recommendation b. AA's should continue to apply appropriate technology to consumer problems and to be aware of the impact of their requests on scientists.

- We are motivated by two things: money and peer recognition. ARS scientists place emphasis on research projects and papers. Scientists want freedom to do research and get peer recognition. In our agency, motivation comes from the supervisor and from industry. (AA, PRO)
- Most scientists are too narrow. ARS data are too limited in scope. Scientists don't have a perspective of the problem or the use of their data. (AA, PRO)
- Sometimes scientific results need to be applied before they get published. (AA, PRO)
- Our agency must understand and consider the level of technologists in the interaction; that is, basic scientists should not be expected to be involved in application (AA, PRO)
- Our agency does not have enough people with research interest. However, we are now placing more emphasis on hiring highly trained staff. Getting Ph. D.'s to work in nonresearch positions is, however, a problem. (AA, PRO).
- The needs of AA's impact on research goals, not science per se--thus differently perceived goals. The AA does support basic research, but its priorities will be to solve short-term needs. (ARS, OP)
- Neither ARS nor AA administrators fully understand the impact on scientists of changing research direction. (S&E, PRO)
- The AA's must understand that we have to do research. (ARS, PO)

Comment: In October 1980, an editorial in the Washington Post addressed the question of whether or not a regulatory agency should also conduct research to underpin its actions.⁷ The case in point dealt with the Environmental Protection Agency and the Love Canal. The article pointed to pros and cons; an agency's ability to interpret results may be weakened without first-class technical expertise, and a regulatory agency cannot force a separate agency to do research. The editorial concluded that the advantage of separate research and regulatory agencies are indisputable, and merit more serious consideration than they have been given.

While separation of ARS and AA's is not at issue in this report, it is well to note that each agency has specific strengths and that these can be developed synergistically, to make something greater than the component parts. Just as scientists are essential to development of new scientific knowledge, so are technical specialists of the AA's essential to the development and application of new technology derived from science. Thus, just as it is important that ARS consider future research and staffing strategies, so it is appropriate for AA's to also consider their future operational and staffing strategies in concert with those of ARS.

This issue could have been included as a part of Issue 1. However, I believe this last issue to be of major importance, and that it needs separate recognition. Because of the need for interaction and for mutual support, the tendency could be toward amalgamation--"research" and "action" in the same agency. The interest of the public can be served by specialists in separate agencies who act independently but not in isolation.

⁷Anonymous. Research and regulation. Editorial. Washington Post. Oct. 27, 1980.

Conclusions

The issues and recommendations evolved rather naturally from the comments of interviewees. As such, maybe no new knowledge was created, but hopefully these diverse perceptions, when collected and evaluated as a whole, have produced a view of ARS/AA interactions from a different perspective.

Although some comments were quite pointed and negative, I believe they reflect a healthy situation--dedicated USDA employees concerned with doing their jobs.

I did not present specific approaches for the recommended actions, because they should be developed on a case-by-case basis. The approach that would work for one agency might not be appropriate for another, even though the goals are the same. However, the following possible course of action might be examined:

- Each agency develop (if it doesn't have one) and circulate to all appropriate employees within and among agencies a statement of mission and goals.
- The Administrators of ARS and AA's develop a joint statement of commitment to work together on problems of mutual concern.
- Each agency develop a strategy for future actions.
- Assess the effectiveness of all instruments and methods of communication.
- Identify select individuals and charge them to seek innovative ways to deal with crises and maintain science.
- Establish an ARS/AA Coordinating Council consisting of representatives from ARS and each AA (to include those outside of USDA). This council would be charged with continuing the assessment and developing specific actions for improving ARS/AA interactions.

It is apparent that relationship between ARS and AA has been evolving; the effects of changes initiated a few years ago were observed, and there is reason to believe that changes will continue. The issues and recommendations that were developed on the basis of this study should help guide and fine-tune future interactions of the Agricultural Research Service with Action Agencies.

- We can't afford to continue to inspect the way we are; we need to look at what we ought to be. (AA, PRO)
- The bottom line is to have in place a productive capability and a structure to produce food, feed, and fiber. (AA, PO)

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